UNITED STATES PATENT AND TRADEMARK OFFICE

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JOHN A. SMART
708 BLOSSOM HILL RD., #201
LOS GATOS, CA 95032-3503

EXAMINER
TRUONG, CAM Y T

ART UNIT	PAPER NUMBER
2162	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/707,852	IRELAND ET AL.
	Examiner	Art Unit	
	Cam Y T. Truong	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2006*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-62* is/are pending in the application.

    4a) Of the above claim(s) *43-62* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 9/17.wod

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

1.   Applicant's election without traverse of group I (claims 1-42) in the reply filed on

5/12/2006 is acknowledged.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

2.   Claim 7 is objected to because of the following informalities: the claimed

limitation "the database client includes application server" is incorrect according to the

specification that the database client process is application server (fig. 4). Appropriate

correction is required.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

4.   Claim 22 is rejected under 35 U.S.C.101 because the language of the claim

raises a question as to whether the claim is directed merely to a software pro se that is

not tied to a technological art, environment or machine which would result in a practice

application producing a concrete, useful, and tangible result to form the basis of

statutory subject matter under 35 U.S.C 101.

Claim 22 recites "a downloadable set of processor-executable instructions" that a

software or program is being processed without any links to a practical result in the

technology arts.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1-3, 9-14, 20-25, 16-19, 26, 32-35 and 37-42 are rejected under 35

U.S.C. 103(a) as being unpatentable over Bireley et al (or hereinafter "Bireley") (US

6115703) in view of Bird et al (or hereinafter "Bird") (US 6598058).

As to claim 1, Bireley teaches the claimed limitation a method for executing a

database statement (col. 1, lines 48-65):

"preparing at least one template for execution of a statement against a database"

as building an executable form or structure of the SQL statement for executing of the

SQL statement against a database in DBMS. The executable form or structure is

represented as a template (col. 1, lines 50-60);

"storing said at least one template in a shared cache available to a plurality of

database connections" as saving the executable structures of the most recently

executed SQL statements in a global cached. If an application program request a

prepare for a SQL statement that has been globally cached, the entire preparation

process can be skipped by obtaining a copy of the executable structures from the global

cache. The global cache is available to database user applications as database

connections (col. 1, lines 50-67; col. 2, lines 1-20; col. 4, lines 20-40);

"in response to a request to execute a particular statement on a given database

connection, determining whether a template for said particular statement is available in

the shared cache" as using a global cache area to save the executable structures of the

most recently executed SQL statements. If an application program requests a prepare

for a SQL statement that has been globally cached. For example, a second statement

is received for execution forms the application. It is determined that the second

statement can be executed using the stored executable structure in cache, then the

second statement is executed using the stored executable structure. The above

information implies that the stored executable structure is available for executing the

second statement (col. 1, lines 65-67; col. 2, lines 1-5; col. 2, lines 33-40);

"and executing the database statement on the given database connection" as

(col. 1, lines 50-67; col. 2, lines 1-20);

Bireley does not explicitly teach the claimed limitation "if the template is available

in the shared cache, creating a database statement based on the template for execution

on the given database connection". Bird teaches the statement portion 41 of dynamic

cache 40 is used to support application requests to prepare the dynamic SQL statement

64 and obtain an executable section. The above information indicates that the

statement portion 41 is available for creating the dynamic SQL statement (fig. 2, col. 8,

lines 37-41).

It would have been obvious to a person of an ordinary skill in the art at the time

the invention was made to apply Birds teaching of the statement portion 41 of dynamic

cache 40 is used to support application requests to prepare the dynamic SQL statement

64 and obtain an executable section to Bireley's system in order to avoid repeated

compilation of identical SQL request so that given the potentially low cost of

compilation.

As to claim 2, Bireley teaches the claimed limitation "wherein said preparing step

comprises preparing a structure for execution of the statement against a database" as

(col. 1, lines 50-64).

As to claim 3, Bireley teaches the claimed limitation "wherein said structure

comprises an executable structure for executing the statement on a database

connection" as (col. 1, lines 50-64; col. 4, lines 20-40).

Claim 26 is rejected under the same rational as claim 3.

As to claim 9, Bireley does not explicitly teach the claimed limitation "if the

template is unavailable, preparing a template for execution of the particular statement

against the database; placing the template in the shared cache; and creating a

database statement based on the template for execution on the given connection".

Bird teaches the claimed limitations:

"if the template is unavailable, preparing a template for execution of the

particular statement against the database; placing the template in the shared cache" as

an application issues a request to execute a SQL statement that is received by the

database manager at the coordinator node. Searching a match based on the SQL

statement and environment of the application request, a search is made in the

statement portion 41 of the dynamic SQL cache 40. If a match is not found, a new

variation entry is inserted appropriately into the statement portion of the cache at that

node (col. 11, lines 10-17);

"creating a database statement based on the template for execution on the given

connection" as the statement portion 41 of dynamic cache 40 is used to support

application requests to prepare the dynamic SQL statement 64 and obtain an

executable section. The above information indicates that the statement portion 41 is

available for creating the dynamic SQL statement (fig. 2, col. 8, lines 37-41).

It would have been obvious to a person of an ordinary skill in the art at the time

the invention was made to apply Birds teaching of the statement portion 41 of dynamic

cache 40 is used to support application requests to prepare the dynamic SQL statement

64 and obtain an executable section; an application issues a request to execute a SQL

statement that is received by the database manager at the coordinator node. Searching

a match based on the SQL statement and environment of the application request, a

search is made in the statement portion 41 of the dynamic SQL cache 40. If a match is

not found, a new variation entry is inserted appropriately into the statement portion of

the cache at that node to Bireley's system in order to avoid repeated compilation of

identical SQL request so that given the potentially low cost of compilation and

processing SQL statements.

Claim 32 is rejected under the same rational as claim 9.

As to claim 10, Bireley teaches the claimed limitation "wherein said storing step includes making said shared cache available on a first database connection" as (col. 1, lines 48-67; col. 2, lines 1-10; col. 10, lines 65-67).

As to claim 11, Bireley teaches the claimed limitation "wherein a template in said shared cache is cloned for use on a second database connection" as (col. 2, lines 10-20; col. 2, lines 30-40, fig. 7B).

As to claim 12, Bireley teaches the claimed limitation "assigning a unique identifier to each statement to be executed against the database" as (col. 11, lines 31-35).

Claim 33 is rejected under the same rational as claim 12.

As to claim 13, Bireley teaches the claimed limitation "wherein said determining step includes using said unique identifier to determine whether a template is available in the shared cache" as (col. 14, lines 15-27).

Claim 34 is rejected under the same rational as claim 13.

As to claim 14, Bireley teaches the claimed limitation "wherein said shared cache comprises an array of templates indexed based on said unique identifier" as (col. 18,

lines 35-60; col. 19, lines 5-25).

Claim 35 is rejected under the same rational as claim 14.

As to claim 20, Bireley teaches the claimed limitation "wherein said creating step

includes attaching the database statement to the given database connection" as (col. 1,

lines 47-60).

Claim 41 is rejected under the same rational as claim 20.

As to claim 21, Bireley teaches the claimed limitation "wherein said executing

step includes returning results of executing the database statement" as (col. 4, lines 63-

67; col. 5, lines 1-15).

Claim 42 is rejected under the same rational as claim 21.

As to claim 22, Bireley teaches the same claimed limitation subject matter in

claim 1, Bireley further teaches the claimed limitation "a computer-readable medium

having processor-executable instructions " as (col. 3, lines 40-60).

As to claim 23, Bireley teaches the same claimed limitation subject matter in

claim 1, Bireley further teaches the claimed limitation "a downloadable set of processor-

executable instructions" as (col. 3, lines 40-60).

As to claim 24, Bireley teaches the claimed limitation:

"at least one template comprising an executable structure for execution of a statement against a database" as creating an executable structure for execution of a first statement against a database (col. 2, lines 30-36; col. 1, lines 40-45);

"a shared cache for storing said at least one template attached to a first connection" as a global cache for storing executable structure attached to an application of a first statement (col. 1, lines 65-67; col. 2, lines 30-37);

"a locater module for locating a template corresponding to a particular statement in the shared cache in response to a request to execute the particular statement on a second database connection" as (col. 1, lines 65-67; col. 2, lines 30-37);

"an execution module for executing the database statement on the second database connection" as (col. 1, lines 65-67; col. 2, lines 30-37).

Bireley does not explicitly teach the claimed limitation "a cloning module for cloning the template to create a database statement for execution on the second database connection".

Bird teaches an application issues a request to execute a SQL statement that is received by the database manager at the coordinator node. Searching a match based on the SQL statement and environment of the application request, a search is made in the statement portion 41 of the dynamic SQL cache 40. If a match is not found, a new variation entry is inserted appropriately into the statement portion of the cache at that node (col. 11, lines 10-17). Bird further teaches the statement portion 41 of dynamic cache 40 is used to support application requests to prepare the dynamic SQL statement 64 and obtain an executable section. The above information indicates that the

statement portion 41 is available for creating the dynamic SQL statement (fig. 2, col. 8, lines 37-41).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Birds teaching of the statement portion 41 of dynamic cache 40 is used to support application requests to prepare the dynamic SQL statement 64 and obtain an executable section; an application issues a request to execute a SQL statement that is received by the database manager at the coordinator node. Searching a match based on the SQL statement and environment of the application request, a search is made in the statement portion 41 of the dynamic SQL cache 40. If a match is not found, a new variation entry is inserted appropriately into the statement portion of the cache at that node to Bireley's system in order to avoid repeated compilation of identical SQL request so that given the potentially low cost of compilation and processing SQL statements.

As to claim 25, Bireley teaches the claimed limitation "wherein said at least one template comprises at least one database prepared statement" as (col. 6, lines 10-16).

As to claim 16, Bireley does not explicitly teach the claimed limitation "wherein said creating step includes reusing immutable portions of a template".

Bird teaches re-using a cached copy of a previously inserted dynamic SQL entry and its section regardless of the node at which it was originally complied (col. 2, lines 60-65).

It would have been obvious to a person of in ordinary skill in the art at the time the invention was made to apply Bird's teaching of re-using a cached copy of a previously inserted dynamic SQL entry and its section regardless of the node at which it was originally complied to Bireley's system in order to avoid repeated compilation of the identical SQL request.

Claim 37 is rejected under the same rational as claim 16.

As to claim 17, Bireley does not explicitly teach the claimed limitation "wherein said creating step includes duplicating mutable portions of a template".

Bird teaches re-using a cached copy of a previously inserted dynamic SQL entry and its section regardless of the node at which it was originally complied. The entry has portions. A copy of dynamic SQL entry indicates duplicated (col. 2, lines 60-65; col. 4, lines 40-50).

It would have been obvious to a person of in ordinary skill in the art at the time the invention was made to apply Bird's teaching of re-using a cached copy of a previously inserted dynamic SQL entry and its section regardless of the node at which it was originally complied to Bireley's system in order to avoid repeated compilation of the identical SQL request.

Claim 38 is rejected under the same rational as claim 17.

As to claim 18, Bireley does not explicitly teach the claimed limitation "wherein said mutable portions include nodes of the template having mutable children".

Bird teaches a dynamic SQL cache includes statement portion that includes a hierarchy structure have mutable nodes or children (fig. 3).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bird's teaching of a dynamic SQL cache includes statement portion that includes a hierarchy structure have mutable nodes or children to Bireley's system in order to update cache and application integrity across a relational database system for further processing SQL statement.

Claim 39 is rejected under the same rational as claim 18.

As to claim 19, "wherein said mutable portions include nodes of the template having mutable fields".

Bird teaches a data processing system having a plurality of nodes at which processing may be performed, a method of identifying an executable comprising identifying the executable by node identification, and entry identification. Each entry includes a description of the environment and a list of variations, each variation includes: an identification number; the executable itself; a list of required privileges; a reference available to the entry in the shipped variation list portion of the cache. The above information indicates that the entry having mutable fields (col. 4, lines 22-28; col. 3, lines 40-41).

It would have been obvious to a person of an ordinary skill in the art at the time

the invention was made to apply Bird's teaching of a data processing system having a

plurality of nodes at which processing may be performed, a method of identifying an

executable comprising identifying the executable by node identification, and entry

identification. Each entry includes a description of the environment and a list of

variations, each variation includes: an identification number; the executable itself; a list

of required privileges; a reference available to the entry in the shipped variation list

portion of the cache to Bireley's system in order to update cache and application

integrity across a relational database system for further processing SQL statement.

Claim 40 is rejected under the same rational as claim 19.

7.   Claims 4-7 and 27-39 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Bireley et al (or hereinafter "Bireley") (US 6115703) in view of Bird et al (or

hereinafter "Bird") (US 6598058) and further in view of Saha et al (or hereinafter "Saha")

(US 2003/0236780).

As to claim 4, Bireley does not explicitly teach the claimed limitation "the request

to execute a particular statement on a given database connection is received at an

application server".

Saha teaches database server that includes application (fig. 7, paragraph

[0039]).

It would have been obvious to a person of an ordinary skill in the art at the time

the invention was made to apply Saha's teaching of database server that includes

applications to Bireley's system in order to implement a process and system for

conserving system resources and reducing the overhead/expense of processing SQL

statements.

Claim 27 is rejected under the same rational as claim 4.

As to claim 5, Bireley does not explicitly teach the claimed limitation "wherein the

request to execute a particular statement on a given database connection is received at

a database client".

Saha teaches database client (fig. 7).

It would have been obvious to a person of an ordinary skill in the art at the time

the invention was made to apply Saha's teaching of database client that includes

applications to Bireley's system in order to implement a process and system for

conserving system resources and reducing the overhead/expense of processing SQL

statements.

Claim 28 is rejected under the same rational as claim 5.

As to claim 6, Bireley does not explicitly teach the claimed limitation "wherein

said shared cache is available at a database client to application threads accessing a

remote database server".

Saha teaches cache is available at a database client to threads accessing a

database server (fig. 7).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Saha's teaching of cache is available at a database client to threads accessing a database server to Bireley's system in order to allows many users access a remove server to generate a new result for the new SQL statement.

Claim 29 is rejected under the same rational as claim 6.

As to claim 7, Bireley does not explicitly teach the claimed limitation "wherein said database client comprises an application server".

Saha teaches the database client includes application server (paragraph [0031]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply the Saha's teaching of the database client includes application server to Bireley's system in order to allows many users access a remove server to generate a new result for the new SQL statement.

Claim 30 is rejected under the same rational as claim 7.

8.   Claims 4-8, 15, 27-31 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bireley et al (or hereinafter "Bireley") (US 6115703) in view of Bird et al (or hereinafter "Bird") (US 6598058) and further in view of the admitted prior art of record.

As to claim 4, Bireley does not explicitly teach the claimed limitation "the request to execute a particular statement on a given database connection is received at an application server".

The admitted prior art of record teaches database server that includes application (paragraph [0063]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply the admitted prior art of record teaching of database server that includes applications to Bireley's system in order to implement a process and system for conserving system resources and reducing the overhead/expense of processing SQL statements.

Claim 27 is rejected under the same rational as claim 4.

As to claim 5, Bireley does not explicitly teach the claimed limitation "wherein the request to execute a particular statement on a given database connection is received at a database client".

The admitted prior art of record teaches database client (paragraph [0063]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply the admitted prior art of record teaching of database client that includes applications to Bireley's system in order to implement a process and system for conserving system resources and reducing the overhead/expense of processing SQL statements.

Claim 28 is rejected under the same rational as claim 5.

As to claim 6, Bireley does not explicitly teach the claimed limitation "wherein

said shared cache is available at a database client to application threads accessing a

remote database server".

The admitted prior art of record teaches cache is available at a database client to

threads accessing a database server (paragraph [0063]).

It would have been obvious to a person of an ordinary skill in the art at the time

the invention was made to apply the admitted prior art of record's teaching of cache is

available at a database client to threads accessing a database server to Bireley's

system in order to allows many users access a remove server to generate a new result

for the new SQL statement.

Claim 29 is rejected under the same rational as claim 6.

As to claim 7, Bireley does not explicitly teach the claimed limitation "wherein

said database client comprises an application server".

The admitted prior art of record teaches the database client includes application

server (fig. 4).

It would have been obvious to a person of an ordinary skill in the art at the time

the invention was made to apply the admitted prior art of record's teaching of to

Bireley's system in order to allows many users access a remove server to generate a new result for the new SQL statement.

Claim 30 is rejected under the same rational as claim 7.

As to claim 8, Bireley does not explicitly teach the claimed limitation "wherein said given database connection includes a connection allocated from a connection pool".

The admitted prior art of record teaches connection pooling involves maintaining a pool (connection pool) of open database connections and managing connection sharing (paragraph [0013]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply the admitted prior art of record teaching of connection pooling involves maintaining a pool (connection pool) of open database connections and managing connection sharing to Bireley's system in order to improve system performance and to reduce the number of idle connections.

Claim 31 is rejected under the same rational as claim 8.

As to claim 15, Bireley does not explicitly teach the claimed limitation "synchronizing access to the shared cache from application threads on a plurality of database connections".

The admitted prior art of record teaches connection pooling is often used for

increased efficiency. Connection pooling involves maintaining a pool

("connection pool") of open database connections and managing connection

sharing across different client requests to improve system performance and to

reduce the number of idle connections. In response to each connection request,

the connection pool first determines if there is an idle connection in the

pool. If an idle connection is in the pool, the connection pool returns that

connection instead of making a new connection to the database. In a

multiple-tier client/server application environment, an application server (or

a multi-threaded database client) process frequently maintains this type of

connection pool for increased efficiency in accessing the database server. The above

information indicates that the system synchronize access to database from user

requests on database connections (paragraph [0013]).

It would have been obvious to a person of an ordinary skill in the art at the time

the invention was made to apply the admitted prior art of record's teaching of

connection pooling is often used for increased efficiency. Connection pooling involves

maintaining a pool of open database connections and managing connection

sharing across different client requests to improve system performance and to

reduce the number of idle connections. In response to each connection request,

the connection pool first determines if there is an idle connection in the

pool. If an idle connection is in the pool, the connection pool returns that

connection instead of making a new connection to the database. In a

multiple-tier client/server application environment, an application server (or

a multi-threaded database client) process frequently maintains this type of

connection pool for increased efficiency in accessing the database server to Bireley's

system in order to increase efficiency in accessing the database server without traffic.

Claim 36 is rejected under the same rational as claim 15.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to
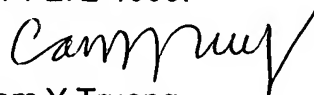
applicant's disclosure.

Kaluskar et al (US 6985904).

Levine et al (US 6446062).

Contact Information

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Cam Y T. Truong whose telephone number is (571)

272-4042. The examiner can normally be reached on Monday to Firday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cam Y Truong
Primary Examiner
Art Unit 2162
6/10/2006